Wilmington District

Wilmington Harbor General Reevaluation Report

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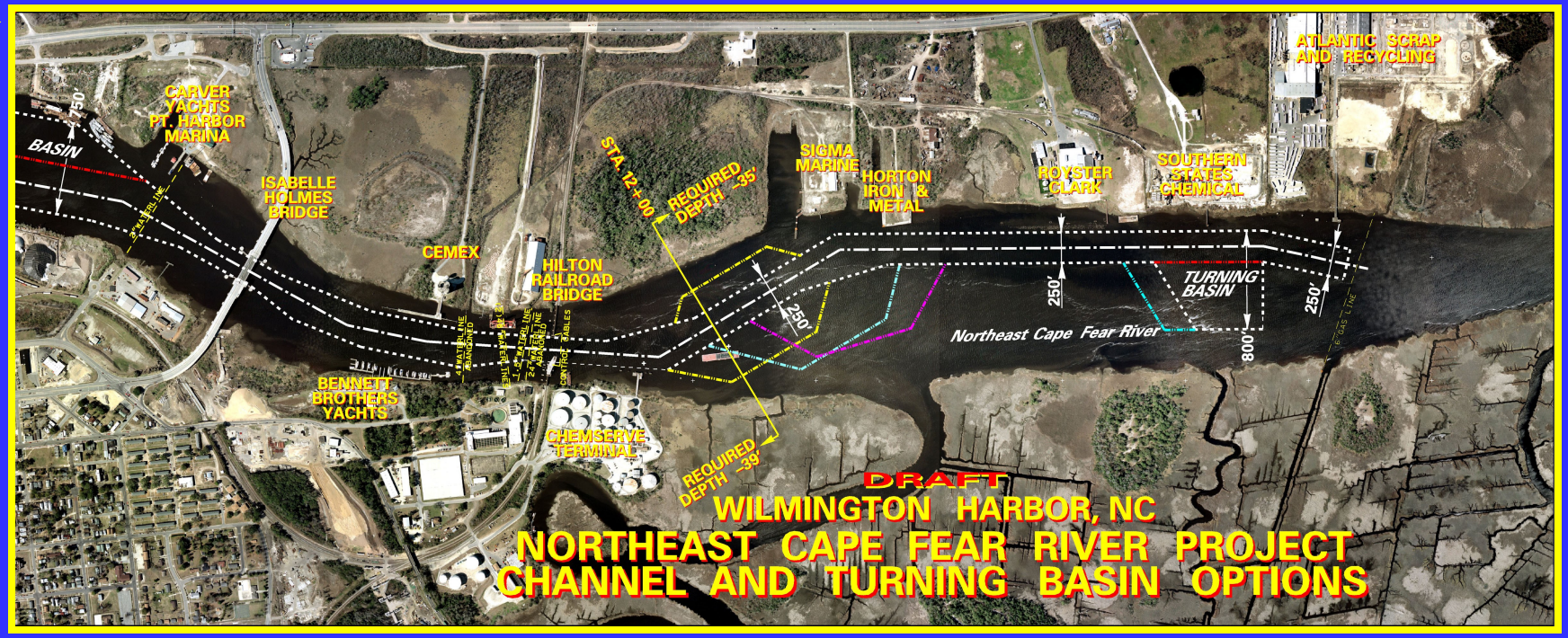
Purpose

- Discuss General Reevaluation Report (GRR)
- Describe Environmental Components of the Project
-



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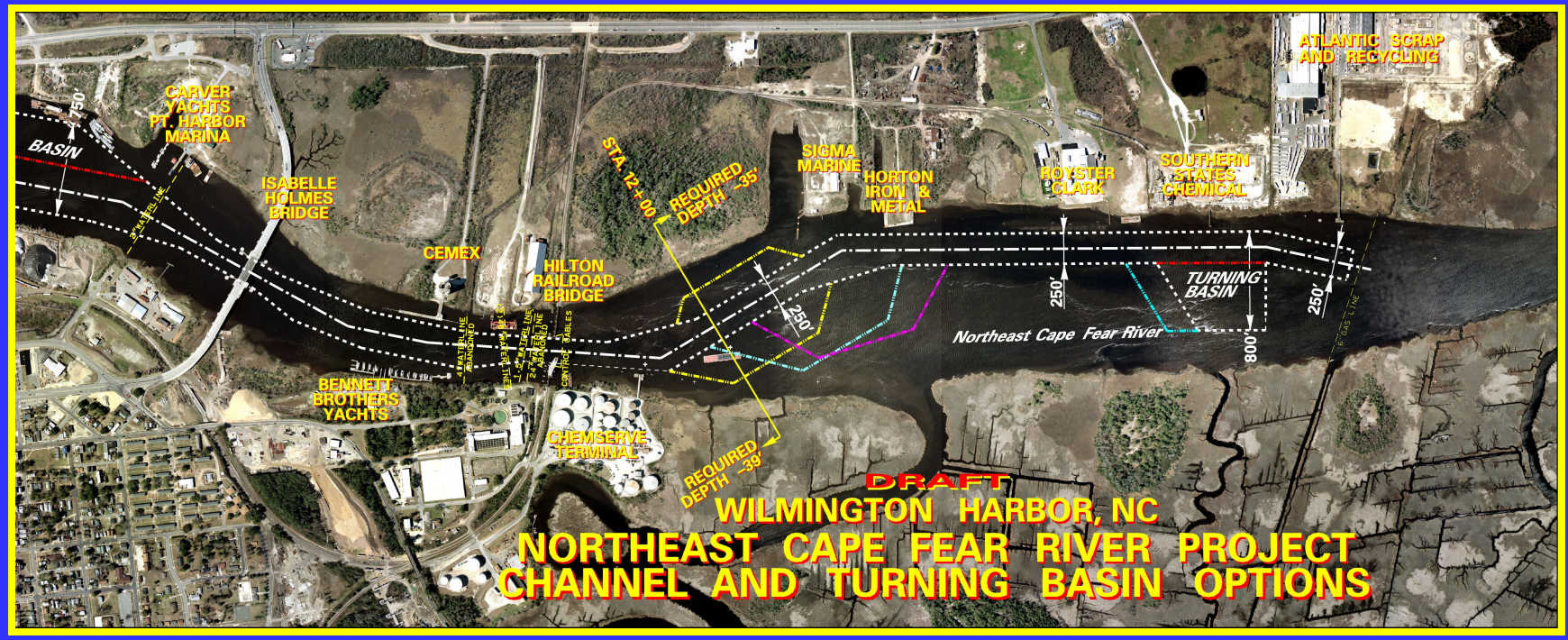
General Reevaluation Report (GRR)

- GRR used for reanalysis of a previously completed study
- Uses current planning criteria and policies
- Changed conditions and/or assumptions.
  - For example, relocated turning basin and mitigation



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Environmental Components

- Fish passage at the Cape Fear River Locks and Dams
- Protection and Restoration of Primary Nursery Area
- Relocation of a ship turning basin in the NE Cape Fear River

700 Acre Habitat Protection
Relocated Turning Basin
New Hanover County
Hilton RR Bridge
28 MI
Cape Fear Memorial Bridge
30 Acre Mitigation Site
State Port
Blasting
Atlantic Ocean
Brunswick County
MOTSU (Sunny Point)
Carolina Beach
6.2 Mile Passing Lane 42’ x 600’
Fort Fisher
Mouth of Cape Fear River
VA.
N.C.
Raleigh
N.C.
S.C.
Wilmington
Cape Fear River Site
N
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Rock Blasting

- NMFS Biological Opinion (BO) required fish passage structure at Lock and Dam #1 for endangered shortnose sturgeon
- Without this condition, blasting precluded
- 78 blasts to date, additional blasting may be required

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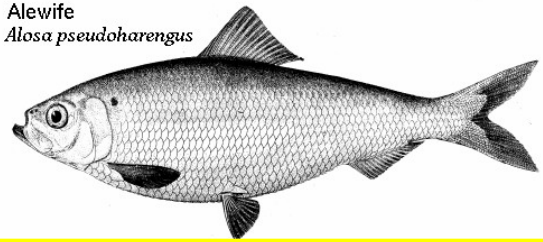
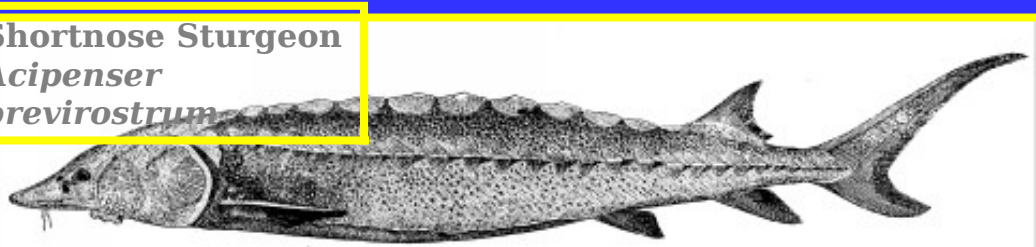
North Carolina Anadromous Fish

Alewife
Alosa pseudoharengus

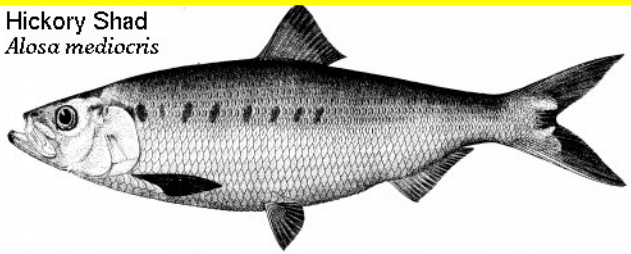


Atlantic Sturgeon
Acipenser oxyrhynchus

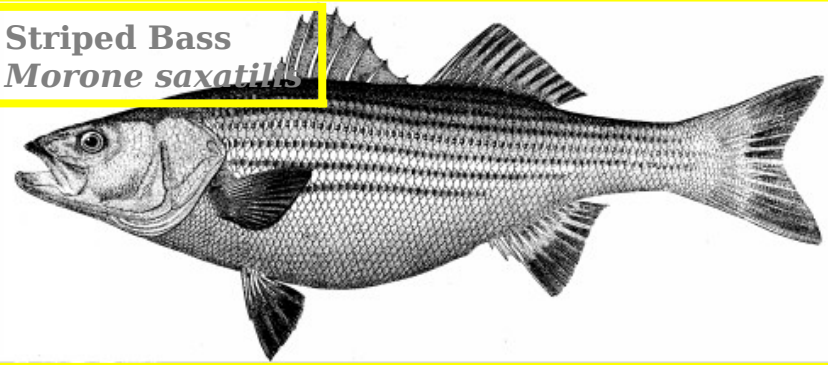
Shortnose Sturgeon
Acipenser brevirostrum



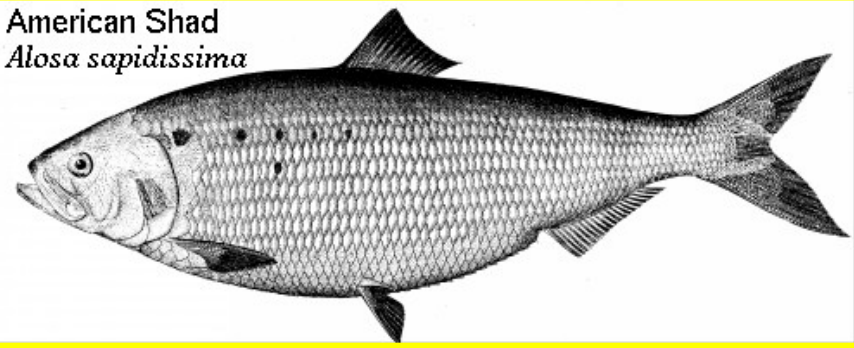
Hickory Shad
Alosa mediocris



Striped Bass
Morone saxatilis



American Shad
Alosa sapidissima



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Lock and Dam # 1 Fish Bypass

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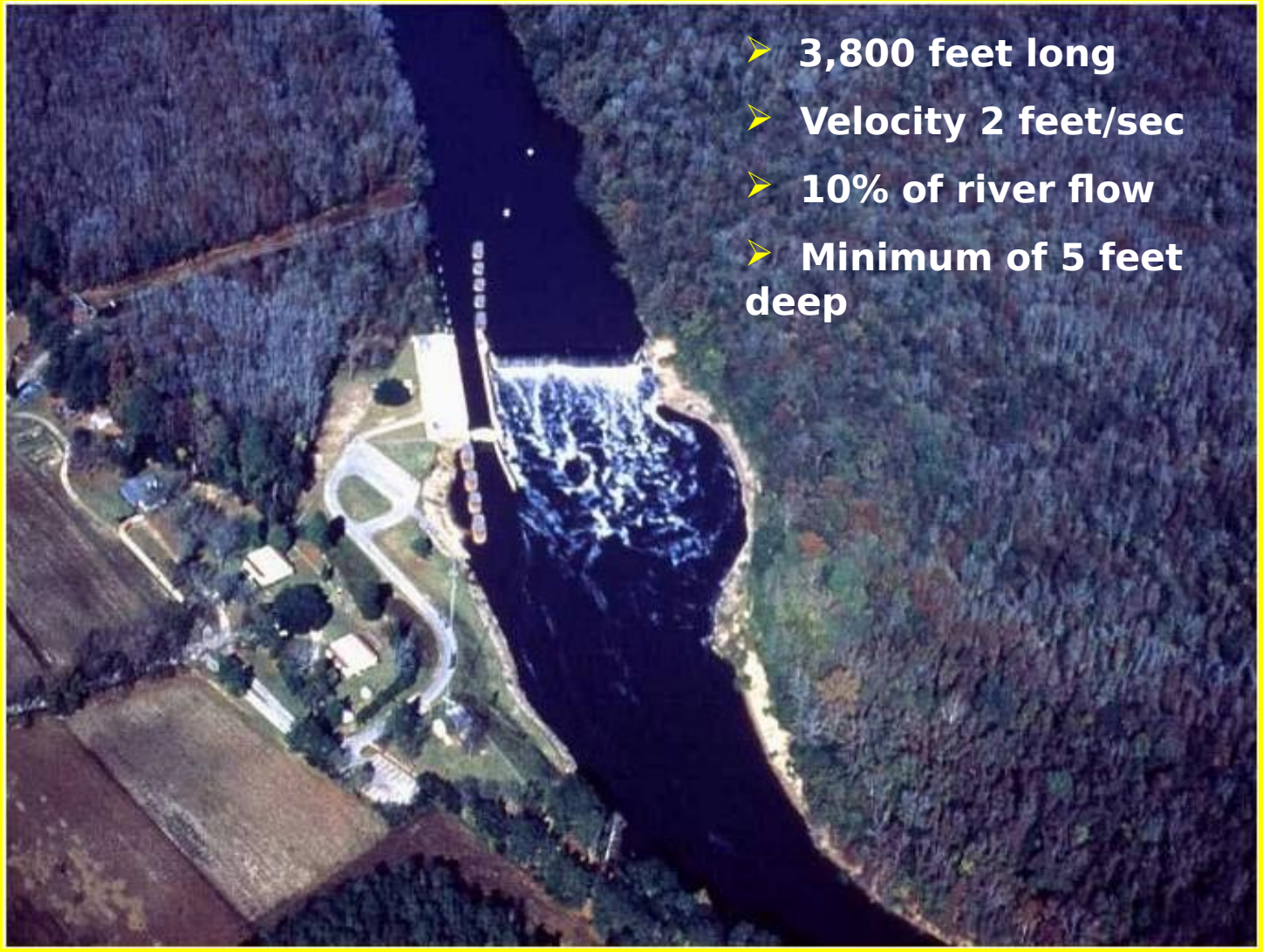
Bypass Design Criteria



- 3,800 feet long
- Velocity 2 feet/sec
- 10% of river flow
- Minimum of 5 feet deep

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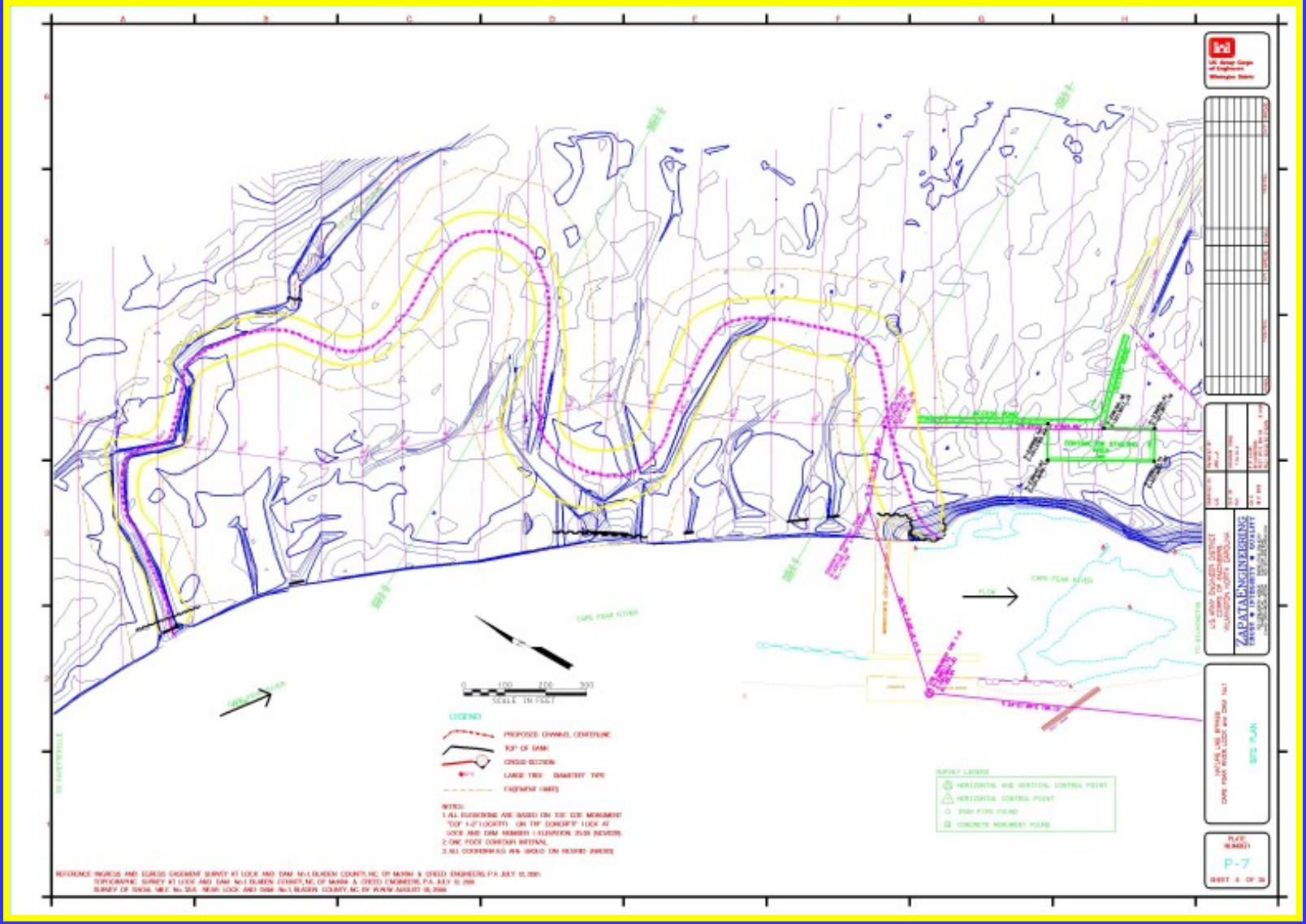
Bypass Design



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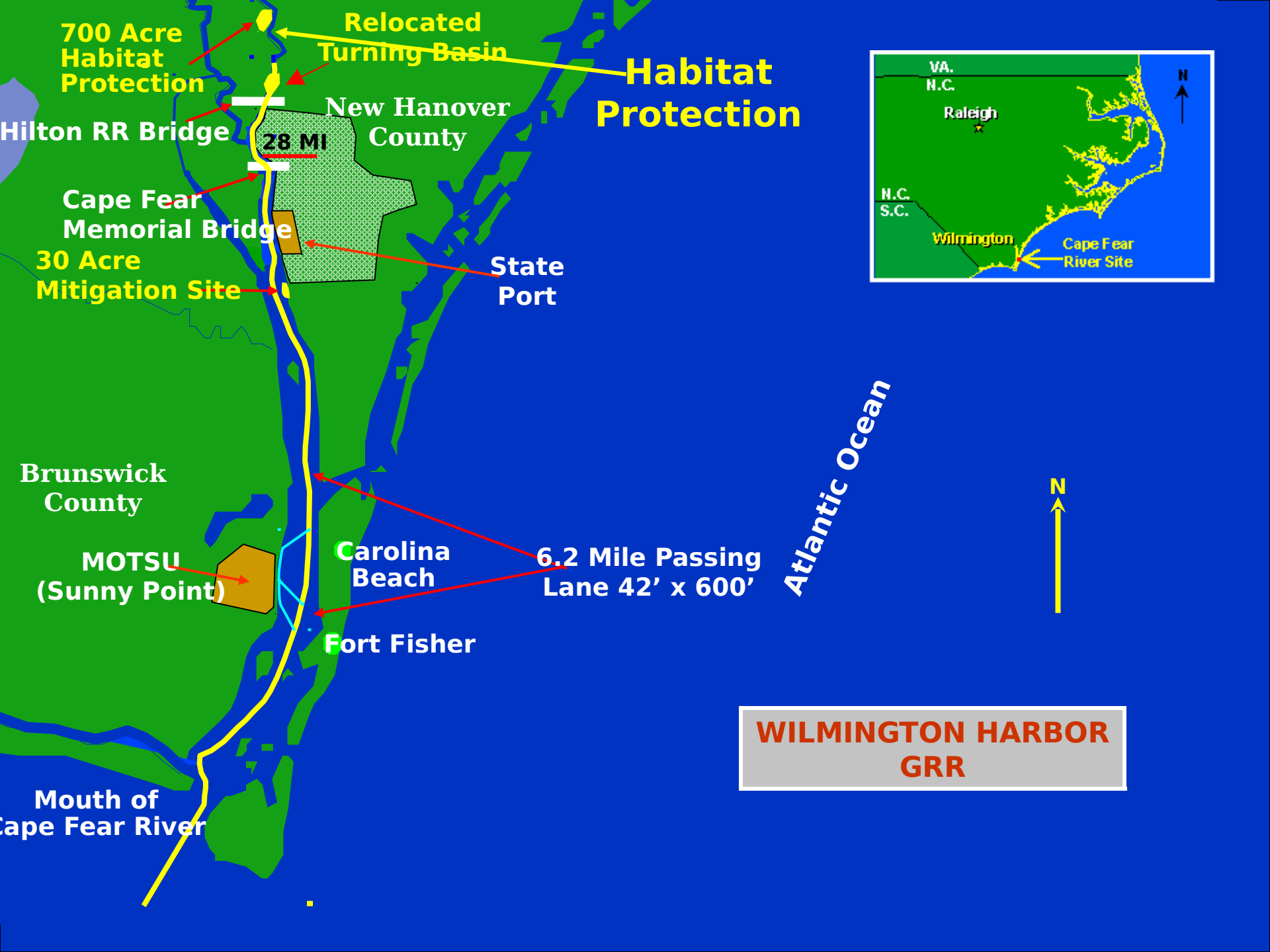
Better Fish Passage Alternatives?

- No commercial traffic
- Operations costs about $500-$600 thousand/year
- Locks and Dams have finite life
- Better fish passage solution considering:
  - Water supply
  - Recreation
  - Commercial and recreation fishing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Relocated Turning Basin
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Hilton RR Bridge
New Hanover County
28 MI
Cape Fear Memorial Bridge
30 Acre Mitigation Site
State Port
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MOTSU (Sunny Point)
Carolina Beach
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Cape Fear River Site
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Protection of Primary Nursery Areas

Objective: No net loss of habitat

- 800 acres of swamp / upland with 29 acres Primary Nursery Areas
- Managed for public benefit
- Protection from siltation and pollution

700 Acre Habitat Protection
Relocated Turning Basin
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Restoration of Primary Nursery Areas

- Made by Dredge disposal
- Create <u>Upfront</u> Mitigation:
  - 4 Acres of Marsh
  - 26 Acres of Shallow Water Habitat
- Monitor site for 3 yea

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Ecosystem Establishment

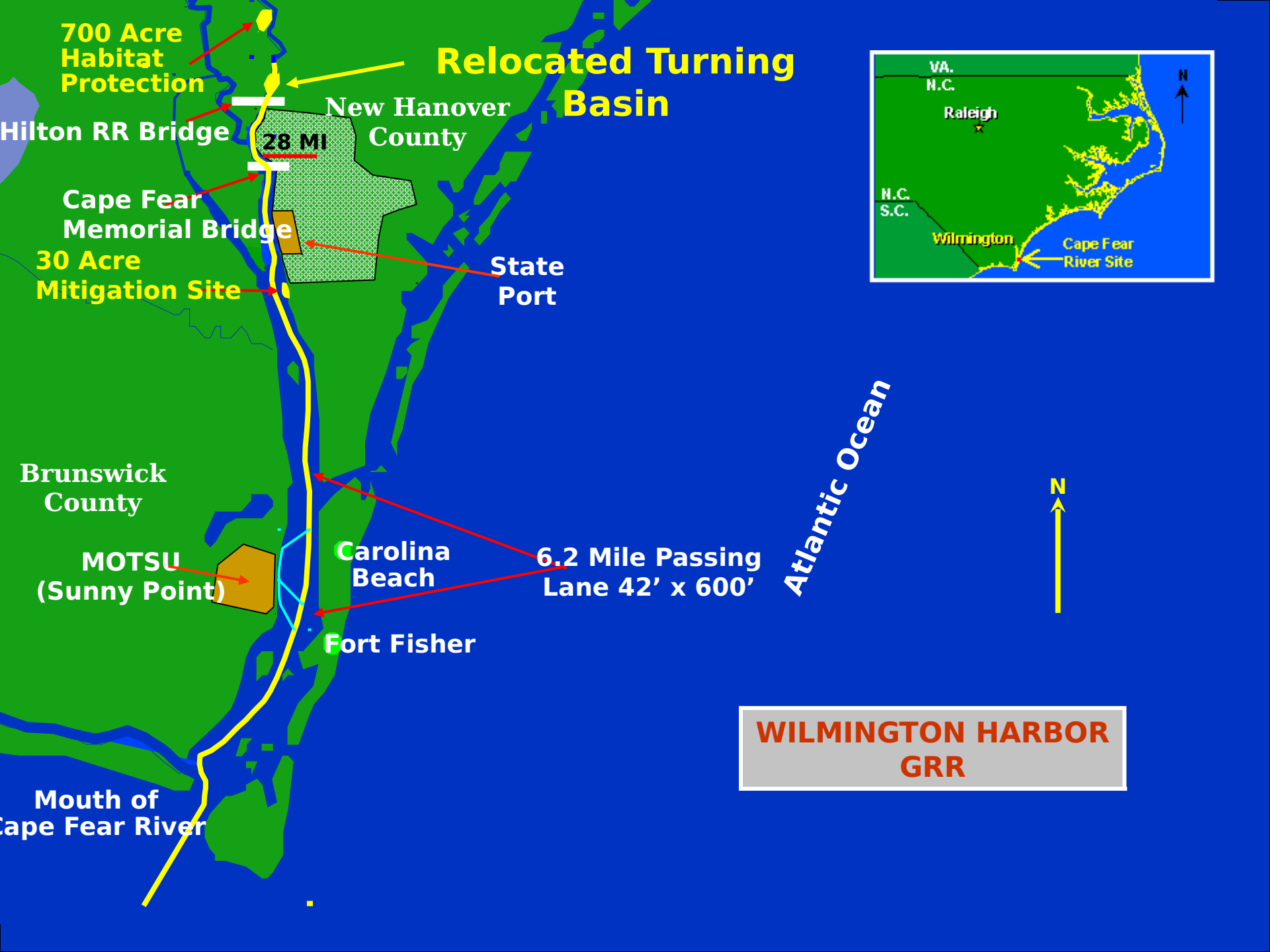
Prior to Construction

Spring 2001

Fall 2002

Spring 2004

- Marsh Established in 2 Growing Seasons
- Success at Year 3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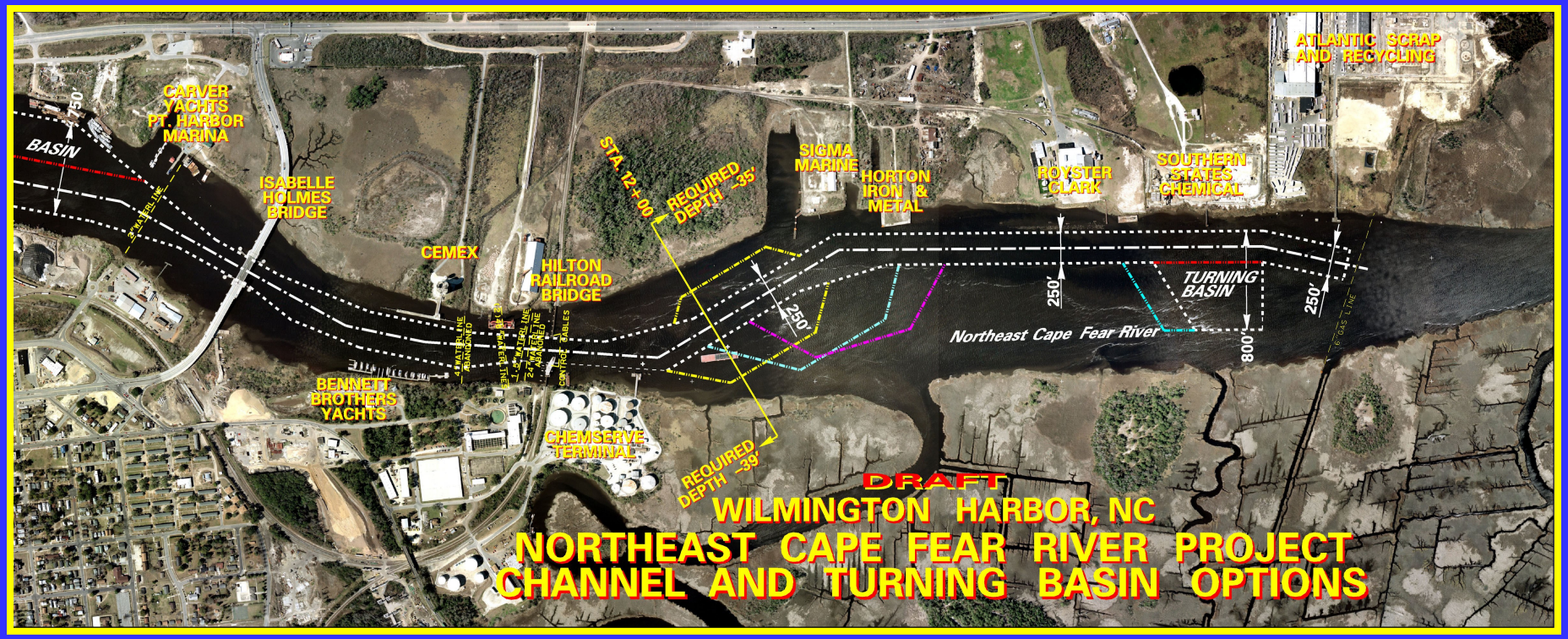
Potential Relocated Turning Basin



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Relocated Turning Basin

- Tight squeeze during daylight going bow first
- At night, backing stern first even more difficult

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Lock and Dam # 1

Fish passage at Lock and Dam #

A. Deauthorization not require

1. Continue locking
2) 2. Nature-like fish way
3) 3. Diversion rock ramp
4) 4. Rock ramp the entire downstream face of the
lam

3. B. Deauthorization required

1) 1. Rock ramp or step pool in lock chamber
2) 2. Alter the dam
3) 3. Lower the dam
4) 4. Remove the dam

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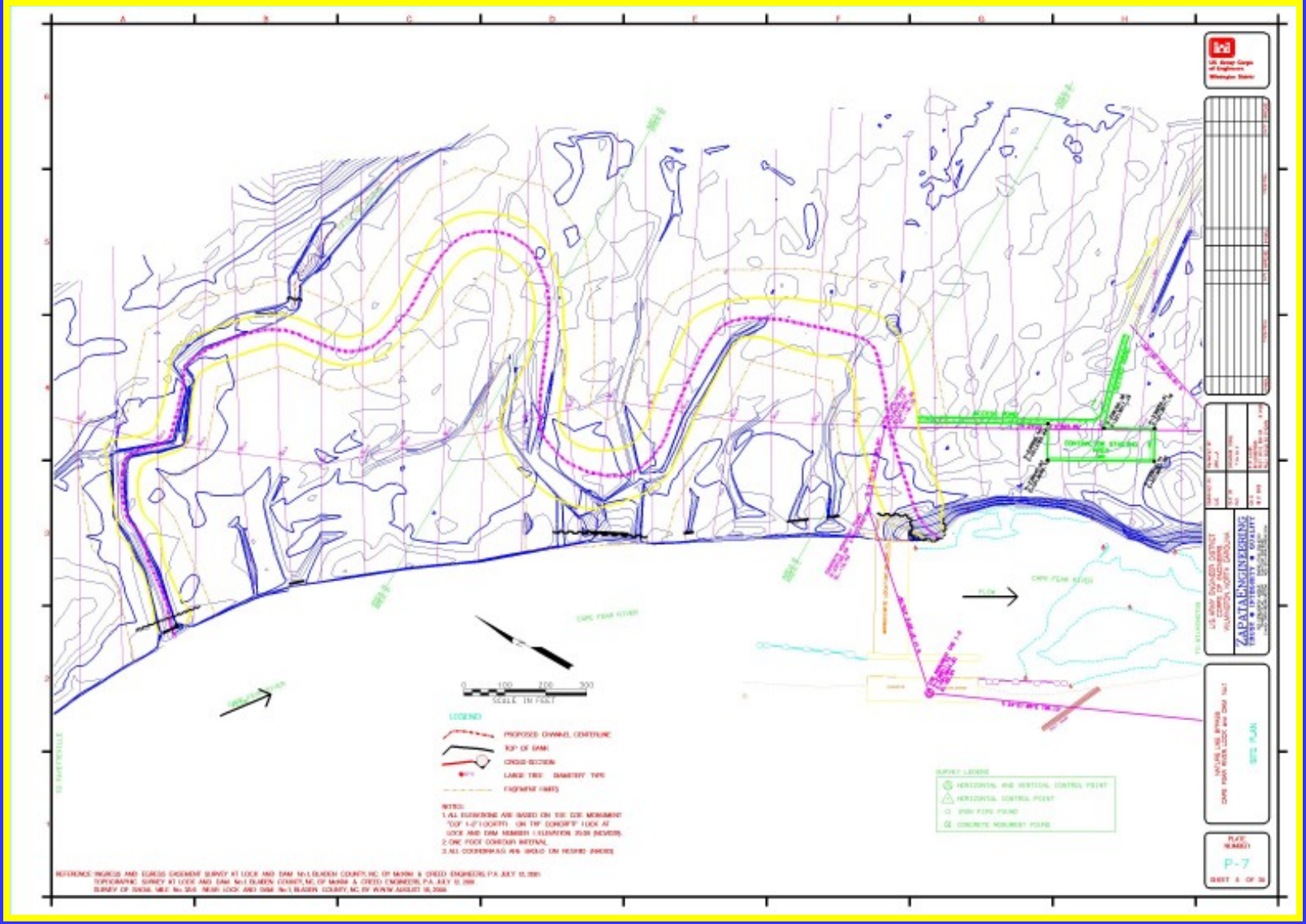
Bypass Design



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Diversion Rock Ramp

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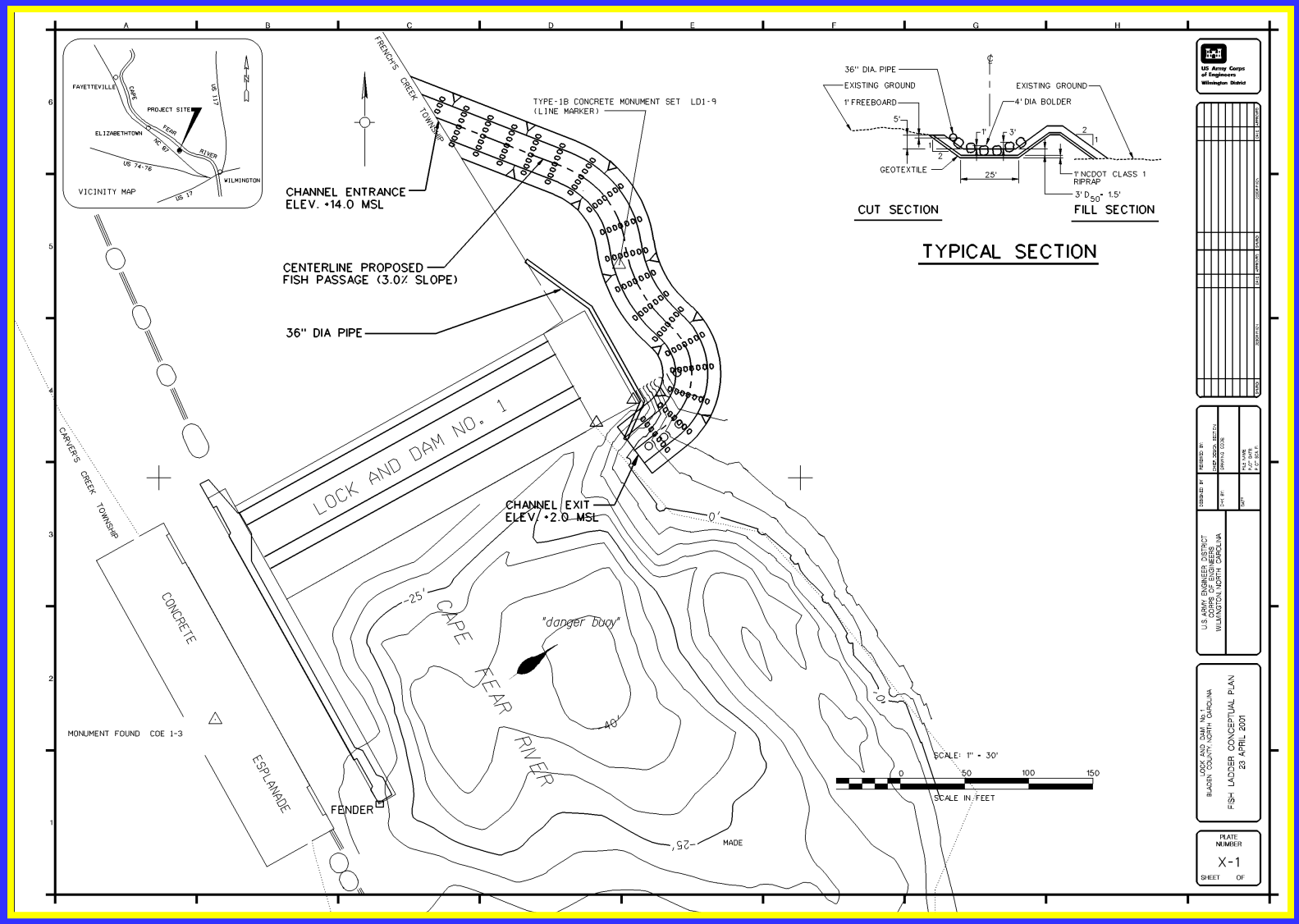

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Rock Arch Rapids
Red River, Fargo, ND

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Red River, Fargo, ND

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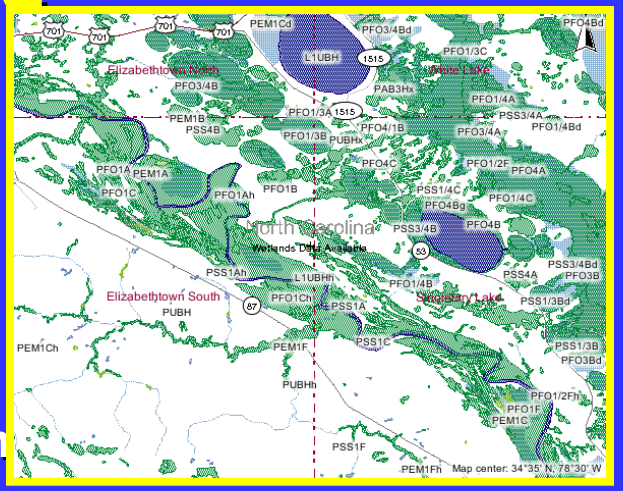
General Reevaluatio Report



- **Existing Information:**

  Environmental: Water quality, fisheries, benthos, cultural resources, protected species, aerial photography, soil surveys, NWI m

  Engineering: Subsurface investigations, nature-like fish passage design, periodic inspection reports, several hydrodynamic models, USGS gage data, hydrographic surveys, preliminary dredging quantities, shoaling analysis, impacts to shallow water habitat

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- **Existing Information (con't):**

  Operations: Documented individual private, public, & industrial boat docks, landings, boat and intake/outfall facilities above L&D #1, #2 and #3, information on similar authorized commercial navigation project where commercial use no longer exists, provided fish lockages

  Planning: Waterborne Commerce, population and income, recreational activities, existing industries

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General Reevaluation Report

- **Planned actions for FY06:**

  Environmental:

  - Determine change in fisheries for various fish passage alternatives
  - Alternative analysis for fish passage and turning basins
  - Collect sediment and chemical data behind the dams
  - Determine the extent of wetlands upstream of lock and dams
  - Vegetation mapping and terrestrial resources
  - Mitigation planning for turning basin
  - NEPA coverage including protected species, EFH, etc.

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General Reevaluation Report

- **Planned actions for FY06 (con't):**

Engineering:

- Additional subsurface Investigations at lock & dams and NECFR channel and turning basins
- Sediment management
- Continue periodic inspections
- Update upstream and downstream survey data
- Stability analysis of dam No. 1 considering effects of downstream scour hole
- Develop scope of work and cost estimate for rehabilitation of lock & dams
- Finalize dredging quantities for turning basin alternatives and select best turning basin alternative

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- **Planned actions for FY06 (con't):**

  Engineering (con't): Develop new hydrodynamic model or build from an existing one? May need all or some of the following:

  - **Period of record data (USGS)**
  - **LIDAR for model development**
  - **Surveys/data for L&D's**
  - **Water User Information**
    - **permitted w/d**
    - **average w/d**
    - **future capacities / year planned**
    - **top of intake pipe / elevation where problems begin**
    - **local knowledge of other water users**

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General Reevaluation Report

- **Planned actions for FY06 (con't):**

Operations: Provide fish lockages to facilitate fish passage on Cape Fear River

Planning: Transportation costs data and models, projections of population and income, projection of recreation activities, formulation and evaluation of plans including National Economic Development Plan (NED)

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General Reevaluation Report

- Actions for FY07: Prepare and Circulate Draft EIS
- Actions for FY08: Prepare and Circulate Final EIS, prepare Record of Decision

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General Reevaluation Report (GRR)

Where do we go from here?

- Notice of Intent to prepare Draft EIS submitted in January 2006
- Form interagency team
- Extensive coordination and investigations to develop solutions
- Circulate GRR and NEPA document
- Make recommendations. May require Congressional approval to implement
- 3-4 year process

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Wilmington Harbor GRR

?

QUESTIONS ?

Comments